

**IN THE CLAIMS:**

This listing of claims will replace all prior versions, and listing, of claims in the application.

**Listing of the Claims:**

1. (Original) A fibre optic accelerometer comprising a seismic mass coaxially constrained within a cylinder of compliant material, the cylinder being circumferentially wound with optical fibre.
2. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1 in which compression of the cylinder by the seismic mass increases stress in the optical fibre.
3. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1, wherein the seismic mass is surmounted with a disc shaped portion.
4. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1, wherein the seismic mass is secured by a tension member to a base plate.
5. (Original) An accelerometer according to Claim 4, wherein a spacer is provided between the cylinder and the base plate.
6. (Original) An accelerometer according to Claim 5, wherein the spacer is integral with the base plate.
7. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1, wherein the optical fibre is wound in a single layer.

8. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1, wherein the base plate is integral with a platform or structure.
9. (Currently amended) An accelerometer according to ~~any preceding claim~~ Claim 1 in which the seismic mass is coaxially constrained within first and second cylinders of compliant material, each cylinder being circumferentially wound with optical fibre.
10. (Original) An accelerometer according to claim 9 in which the seismic mass comprises a first circumferentially located bearer member arranged in operation to bear on an end of at least one of the compliant cylinders.
11. (Original) An accelerometer according to claim 10 in which the first circumferentially located bearer member is arranged in operation to bear on respective ends of both of the compliant cylinders.
12. (Original) An accelerometer according to claim 10 comprising a second circumferentially located bearer member arranged in operation to bear on an end of a second of the compliant cylinders.
13. (Currently amended) An accelerometer according to ~~any one preceding claim~~ Claim 1 in which the outer surface of the seismic mass and the inner surface of the one or more compliant cylinders are shaped so as to prevent the one or more cylinders deforming inwardly under axial compression.
14. (Currently amended) An optical interferometer comprising an accelerometer according to ~~any preceding claim~~ Claim 1.

15. (Original) A method of measuring acceleration comprising providing a seismic mass coaxially constrained within a cylinder of compliant material, the cylinder being circumferentially wound with optical fibre, axial displacement of the seismic mass deforming the cylinder so as to vary the stress induced in the optical fibre.
16. (Cancelled).
17. (Currently amended) A method according to ~~any one of claims 15-16~~ Claim 15, in which compression of ~~each~~ the cylinder by the seismic mass increases stress in the ~~respective~~ optical fibre.
- 18-19. (Cancelled).
20. (New) A fibre optic accelerometer according to Claim 1, wherein said compliant material is rubber or rubber like.
21. (New) A fibre optic accelerometer comprising a body of compliant material having an internal cavity extending in an axial direction;  
optical fibre wound circumferentially around said body; and  
a seismic mass located within said cavity; wherein the internal surface of said cavity is constrained against radial displacement.
22. (New) A fibre optic accelerometer according to Claim 20, wherein the internal surface of the cavity is constrained by the seismic mass.